UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,227	09/08/2003	Soichiro Ogawa	50340-156	1064

7590 08/09/2006

McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER	
ECHELMEYER, ALIX ELIZABETH	
ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/656,227	OGAWA, SOICHIRO	
	Examiner	Art Unit	
	Alix Elizabeth Echelmeyer	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *9-8-3* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9-8-03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement had been considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2 and 5-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatano et al. (Japanese Publication Number 2001-143742).

Hatano et al. teach a mounting structure for a fuel cell stack in a vehicle (abstract).

Regarding claim 1, the structure includes endplates at either end of a fuel cell stack that permit the stack to expand and contract in the direction of lamination ([0037], [0058]). The mounting structure also includes rubber mounting to fix the fuel cell structure to the car ([0038]).

As for claim 2, Hatano et al. teach that one of the plates, attached to the piping device for supply and discharge of fuel gas, oxidant gas, and a cooling medium, moves to allow for expansion and contraction of the fuel cell while the other plate is fixed ([0017]).

Regarding claims 5 and 6, Hatano et al. teach a bolt to secure the fixed endplate to the mounting structure (Drawing 2, [0017]). It can be seen from the drawing that the bolt is perpendicular to the endplate and passes through the portion that extends beyond the plane of the plate.

As for claims 7 and 8, Hatano et al. teach that the endplates are made of conducting material such as copper ([0031]).

Claim 9 of the instant application is drawn to the connection of two fuel cell stack units arranged in parallel. Hatano et al. teach this arrangement, including the same fluid supply/discharge system used at the movable end of the stacks (Drawing 1).

Regarding claims 10 and 11, Hatano et al. also teach a bolt connect the piping device to the mounting structure (Drawing 2).

As for claim 12, Hatano et al. are silent on the materials used to make the piping device for delivery of fluids to and from the fuel cell stack. However, Hatano et al. do teach that the piping device is connected to the electrically conductive endplate. The piping device would inherently be made of electrically nonconductive materials since, if it were not, it would conduct the energy generated by the fuel cell stack away from the end plate, thus disallowing all of the energy generated to be used for the load for which it was intended. Further, the energy that might be conducted to the piping device were it made of electrically conductive materials could cause the contents of the piping device to be heated, negating the purpose of the cooling fluid.

As for claim 13, Hatano et al. teach brackets for mounting the fuel cell stack to a car, including a rubber mounting ([0037]-[0038]).

Claim 14 requires the limitations of claim 1, which is rejected above. Further, Hatano et al. teach an installation plate, reference numeral 31 in drawings 2 and 12, to which the bolts attach the fuel cell stack ([0037]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al. in view of Chen (US Patent Number 6,274,258).

The teachings of Hatano et al. as discussed above are incorporated herein.

Hatano et al. teach the fuel cell system but fail to teach an expansion/contraction mechanism.

Chen teaches that the endplates of a fuel cell that is allowed to thermally expand and contract have scalloped edges to engage the inside surface of the outer case (abstract; Figure 1; column 4 lines 54-56). Further, fuel feed tubes are arranged to pass through the corrugations of the endplate (column 5 lines 55-59).

It would be advantageous to use the endplate of Chen in the fuel cell system of Hatano et al. because the scalloped edges, like depressions and projections of the instant application, engage the inner surface of the case and prevent rotation of the

endplate. Further, the fuel feed tubes serve as a seal to prevent fuel from escaping the tubes before it is introduced to the stack.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the endplate of Chen in the fuel cell system of Hatano et al. in order to engage the inner surface of the casing and prevent rotation of the endplate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is 571-272-1101. The examiner can normally be reached on Mon-Fri 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER

Alix Elizabeth Echelmeyer
Examiner
Art Unit 1745

aee